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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/772,382
Filing Date: January 29, 2001
Appellant(s): HUANG ET AL.

Mr. Craig Fischer
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6 January 2009 appealing from the Office
action mailed 21 April 2008

(1) Real Part of Interest

A statement identifying by name the real part of interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after non-final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Bayer US Patent 6,311,190

“Programmatic Environments for Oracle Objects”, Oracle 8i Application Developer’s Guide –Fundamentals, copyright 1999, Oracle Corporation, pp.1-18,

“Programmatic Environments”, Oracle 8i Application Developer’s Guide – Fundamentals, copyright 1999, Oracle Corporation, pp.1-27

Blumberg US 6,240,415

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims: The ground(s) for rejection are reproduced below from the Final Office Action, mailed 21 April 2008, and are provided here for the convenience of both the Appellant and the Board of Patent Appeals:

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 USC. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-7, 9, 11-15 and 18-32** are rejected under 35 USC. 103(a) as being unpatentable over **Bayer** US Patent 6,311,190 in view of **Oracle 8i** and further in view of **Blumberg** US 6,240,415.

Oracle 8i is described in the following two references:

“Programmatic Environments for Oracle Objects”, Oracle 8i Application Developer’s Guide –Fundamentals, copyright 1999, Oracle Corporation, pp.1-18, hereafter referred to as **Reference A**.

“Programmatic Environments”, Oracle 8i Application Developer’s Guide – Fundamentals, copyright 1999, Oracle Corporation, pp.1-27, hereafter referred to as **Reference B**.

Regarding **Claims 1 & 2**, Bayer teaches:

transmitting each of the votes over the internet to a server of the website;

Figure 1, column 3 line 3-7 – the server receives the votes

receiving raw votes from the voters over the internet at the web site server in response to the survey question (Figure 13 #98, votes received; column 2 line 39,

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server provides an addressable voting site –see also column 3 line 3-7); and

tabulating in memory the stored votes accumulated over a predefined time interval to generate intermediate voting results. (column 17 line 63-65, survey durations are predefined and are used to determine the generating of intermediate voting results-see also column 18 line 35-38). Bayer teaches that each vote is individually written to the database, so there is a record of each person voting.

writing the intermediate voting results to the database (Column 3 line 7—line 12, when a person votes, the network server receives the answers and adds those answers representing votes to records in the database (memory) tallying totals for each response answered. Since the server performs these tasks every time a person votes, it generates an intermediate voting result and writes it to the database.)

computing in real time a final voting result to the survey question by continuously tallying each of the intermediate voting results written in the database (Figure 13 #98, votes received and results page constructed of final voting result to the survey question). Bayer teaches that at the end of campaigns, the intermediate results from various surveys are computed based on the intermediate voting results (see column 18 line 17-21, surveys, i.e. intermediate voting results, are tallied at the end of a campaign to compute a final voting result to the survey question).

Column 1 line 19-24, viewers can immediately view their results (i.e. in real time) after voting.

Column 7 line 25-30, the Tally table continuously updates vote totals received from voters.

Bayer teaches the counting and tabulating of raw votes (i.e. that have never been counted) to determine the results of a survey.

Bayer does not teach high density voting over a computer network using an object residing on a server that maintains persistent connections between the object and a database; caching the votes received and tabulating as a batch in a memory cache using the object; using the cached votes in calculating a result.

However, the concept of using objects in a memory cache to provide a buffer to enable high performance access to a database is a well-known concept, as evidenced by Oracle 8i.

Specifically, Oracle 8i teaches the use of objects to:

providing an object on the server that maintains connections with the database.

Reference B page 2 paragraph 5 line 3-4, objects maintain connections between the copy in the cache and the corresponding database object--this database object is in memory on the server.

Caching the votes received in a memory cache for a predefined time interval using the live event object.

Reference A, page 2 paragraph 3 line 1, a client side object cache for caching

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objects in memory;

Reference A page 5 paragraph 2 line 1, when pinning an object, the duration an object is pinned in memory, that is to have computations performed on the object, can be specified the programmer. That is, the programmer can predefine the intervals in which votes are tabulated in memory.

tabulating as a batch in the memory cache the cached votes accumulated over the predefined time interval to generate intermediate voting results;

Reference B page 8 paragraph 4, Oracle teaches running these objects on the server, where this server is separate from the database server – see the Figure “OO4O In-Process Automation Server”.

Reference A page 2 paragraph 2 line 5, computations can be performed on each object, including but not limited to a plurality of arithmetic operations of data, including tabulation of data (i.e. votes);

Reference A page 4 paragraph 2 line 1-2, objects in memory are pinned for the application to manipulate, including performing the computations mentioned above, and;

Reference A page 5 paragraph 2 line 1, when pinning an object, the duration an object is pinned in memory, that is to have computations performed on the object, can be specified the programmer. That is, the programmer can predefine the intervals in which votes are tabulated in memory.

Reference A page 8 paragraph 2 line 1-4, before an object, including those which tabulate votes, can be updated, it must be pinned in the cache, then, objects which are marked as updated are flushed to the server when the transaction is committed.

The period of a time that objects are cached in memory means that data is written to the object in batch form prior to being flushed and updated to the database

Writing results, including intermediate results accumulated in memory (i.e. a cache buffer as a batch) and each raw vote accumulated over the predefined time interval, to the database at the predefined time interval only after data has been cached and tabulated as a batch in the memory cache.

Reference A page 2 paragraph 3 line 7, objects in the cache, including those which contain intermediate results as a result of calculations (see Reference A page 2 paragraph 2 line 5 as per above), can be written (i.e. flushed) to the database. This means that any calculation including counting (i.e. tabulating of vote results), can be tallied to the database when the predefined interval for updating the cache occurs – see Reference A page 5 paragraph 2 line 1 for a discussion about setting a predefined time interval for pinning objects in the cache. Since the cache updates the database periodically, the cache is operating as a batch - data is written as a group, rather than continuously

Wherein data is cached and tabulated in the live event object prior to writing in the database

Reference A page 2 para 5, the changes made to the object copy in the cache occur prior to the object being updated into the database – Since Oracle is referencing transactions here, the transactions are interpreted by the examiner to include counting or summing data that is to be updated into the database.

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Accordingly, a programmer using Oracle 8i can create an object cached in memory to tabulate data (i.e. votes) (objects in cached memory can have computations performed on them, as discussed above), specify intervals that the object will tabulate votes, and at the end of that interval, update the database using a transaction from that object.

Furthermore, Oracle 8i teaches that the use of cached objects provides high performance access to a database (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with providing an object residing in memory on the server to cache votes and tabulate them in memory to generate intermediate voting results at specified intervals, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

Bayer and Oracle 8i do not teach persistent connections used to connect an object application to a database.

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The examiner takes Official Notice that persistent connections used in object-oriented programming to connect an object application to a database are well known in the art and are provided by most object programming languages, including Java and C++. Persistent connections enable an object-oriented application to always have a connection to a database.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer and Oracle 8i, with maintaining persistent connections between the object and the database, for the purpose of enabling high density interactive voting over a network that maintains persistent connections to a voting database.

Bayer and Oracle 8i do not teach:

presenting a survey question and a plurality of responses to voters viewing the live television broadcast event;

directing the voters to cast votes over the Internet at a web site of a sponsor of the live television broadcast event;

presenting the final voting results to viewers on the live television broadcast event prior to its conclusion.

Blumberg teaches:

presenting a survey question and a plurality of responses to voters viewing

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the live television broadcast event;

column 5 line 48-52, 58, remote viewers can input their responses over the internet while viewing a program on the television.

directing the voters to cast votes over the Internet at a web site of a sponsor of the live television broadcast event;

column 8 line 21-23, the users can interact with the website – see also column 10 line 30-32, users can cast votes on which play should be made during sports television broadcast – see also column 10 line 62-65.

presenting the final voting results to viewers on the live television broadcast event prior to its conclusion.

Column 11 line 15-20, viewers of a sports game can vote on which play the team should run (e.g. during a huddle). The results of their voting is displayed in the subsequent play.

Blumberg teaches that his invention provides a way for viewers of a live television event to participate in the event (column 3 line 20-25). Blumberg teaches that his invention provides for viewers of a live television event to be more intimately involved in the ongoing decisions during a game (column 11 line 29-31).

Blumberg addresses involving viewers in a live television broadcast event through the use of voting over the internet. Blumberg utilizes a database along with a webpage to interface with the live event viewers (column 9 line 45-50).

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Bayer's invention addresses providing detailed surveys through the use of the internet and a database to provide for detailed polling of users interested in participating in surveys.

Oracle 8i addresses what is known in the art regarding the operation and function of databases.

Because Blumberg, Bayer and Oracle 8i address the utilization of databases, they are all analogous art.

Bayer teaches that an automated system for creating and administering surveys over the internet allows for users to vote and to see their results immediately, i.e. in real time.

Oracle 8i teaches using objects in connection with a database (including using a buffer) to support writing to a database. Oracle 8i teaches what is well known in the art regarding the use of a cache (i.e. a buffer) to provide for temporarily storing data (i.e. votes, since an electronic vote is nothing more than data).

As noted above, Blumberg teaches that receiving information into a database that can be used to provide direct feedback during a live television event engages the viewers by directly involving them in a decision making process during the event.

One of ordinary skill in the art at the time of the invention would modify the combined teachings of Bayer and Oracle 8i regarding providing for surveys and voting using a database and a cache, to include the step of providing feedback results during a

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live broadcast television event, as taught by Blumberg, because it would engage the viewers of the television event by involving them in the decision-making process of the live television event.

Regarding **Claim 3**, Bayer does not teach: **the object being resident in computer memory on the server.**

Oracle 81 teaches: **the object being resident in computer memory on the server** (Reference B page 2 paragraph 5 line 3-4, objects maintain connections between the copy in the cache and the corresponding database object--this database object is in memory on the server.).

Oracle 8i teaches that the use of cached objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with providing an object residing in memory on the server, as taught by Oracle 8i, because it would provide a high performance way to connect to a database.

Regarding **Claim 4**, Bayer does not teach: **having the object establish and maintain at least three persistent connections**.

The examiner takes Official Notice that it is established and well known in the art to program persistent connections in object-oriented applications, whether there be three or more persistent connections, depending on the requirements of the particular application. Programming languages such as Java and C++ have provisions for establishing and maintaining persistent connections in the course of creating object-oriented applications. These connections ensure that an application has a continuous link to either a database or other related applications to ensure accessibility during the course of program execution.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the limitations of Claim 1, as taught by Bayer and Oracle 8i, with having the object establish and maintain at least three persistent connections with the database, for the purpose of ensuring continuous accessibility to the database during the course of program execution.

Regarding **Claim 5**, Bayer teaches **raw votes** (Figure 3L, answerID field) **cast by each of the voters** (column 9 line 46, each response from a voter is put in table).

Regarding **Claim 6**, Bayer does not teach: **the persistent connections**

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including current voting results obtained using the cached votes.

Oracle 8i teaches: **obtaining results using information, including votes, that are in an object cache** (Reference A page 2 paragraph 2 line 5, computations can be performed on each object, including but not limited to a plurality of arithmetic operations of data, including tabulation of data (i.e. votes);

Furthermore, Oracle 8i teaches that the use of cached objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with tabulating votes in cached memory to obtain current voting results, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes

Bayer and Oracle 8i do not teach persistent connections.

The examiner takes Official Notice that persistent connections used in object-oriented programming to connect an object application to a database are well known in

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the art and are providing by most object programming languages, including Java and C++. Persistent connections enable an object-oriented application to always have a connection to a database.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the limitations of Claim 4, as taught by Bayer and Oracle 8i, with using persistent connections to the database, for the purpose of improving performance by performing data tabulation using an object cache with persistent connections to the database.

Regarding **Claim 7**, Bayer teaches: **voting in response to the survey questions asked during an event** (column 6 line 50-51, surveys are programmed to start in advance of certain days-voting is in response to the questions posed during a survey), **including a definition of the event** (column 6 line 33-34, voting campaign is comprised of one or more surveys; column 6 line 55, survey start dates set in advance).

Regarding **Claim 9**, Bayer teaches: **tabulating the intermediate voting results to compute final voting results** (column 17 line 18-20, for each set of responses, percentages and histogram are calculated to compute final voting results from intermediate results).

Regarding **Claim 10**, Bayer teaches: **tabulating the intermediate voting**

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results continuously to compute final voting results in real time (Figure 13 #98, receive votes; Figure 14 #124, votes added to totals, column 2 line 19-20, in real time since voters can see results when they vote).

Regarding **Claim 11**, Bayer teaches: **creating the survey question** (column 2 line 60-61, question created based on campaign).

Regarding **Claim 12**, Bayer teaches: **defining an event in which the survey question is asked** (column 6 line 50-51, start date set for survey (i.e. event) in advance; column 6 line 53-54, surveys are set in queue order prior to offering to customers), **and checking a validity of the survey question and the event definition to ensure accuracy** (Figure 7 – add or modify campaign, Figure 8 – add or modify survey question, Figure 9 – add or modify survey).

Bayer teaches that the administrator can check to see if particular questions exist for a survey (column 13 line 21) and can review or modify the question if needed (column 13 line 37, review or modify page for changing question).

Regarding **Claim 13**, Bayer teaches: **determining whether there has been a new survey question created and, if so, then updating the database** (column 13 line 21-23, administrator checks if question exists; column 13 line 29, QuestionType table in database is updated by administrator).

Regarding **Claim 14**, all the limitations are addressed in Claim 1 above, except for: **wherein the object is a non-relational object**.

Bayer does not teach **wherein the object is a non-relational object**.

Oracle teaches **wherein the object is a non-relational object**.

Reference A page 1 paragraph 1 line 3-4, the objects in Oracle 8i are language based, e.g. based on Java, C++ etc.

Furthermore, Oracle 8i teaches that the use of cached, non-relational objects provides high performance access to a database (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with providing an object residing in memory on the server to cache votes and tabulate them in memory to generate intermediate voting results at specified intervals, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

Regarding **Claim 15**, Bayer does not teach: **the object contains some of the voting data as well as procedures and instructions for manipulating at least some of the data.**

Oracle 8i teaches: **that the object contains some of the voting data** (Reference A page 2 paragraph 3 line 6, objects can be updated, i.e they contain data, including voting data) **and that the object contains procedures and instructions for manipulating data** (reference A page 2 paragraph 3 lines 2-7, Oracle 8i provides support for navigational access of objects, including containing procedures and instructions for creating, updating and deleting objects in the cache, i.e. data).

Oracle 8i teaches that the use of cached, non-relational objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with the object contains some of the voting data as well as procedures and instructions for manipulating at least some of the data, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

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Regarding **Claim 16**, Bayer teaches: **tabulating the final voting result using the intermediate voting result** (Figure 13 #98, receive votes; Figure 14 #124, votes added to totals, column 17 line 18-21, results calculated for each voter from intermediate results).

Regarding **Claim 17**, Bayer teaches: **tabulating the final voting result in real time** (Figure 13 #98, receive votes; Figure 14 #124, votes added to totals, column 17 line 18-21, results calculated for each voter from intermediate results in real time).

Regarding **Claims 18 and 19**, Bayer does not teach **one**, per Claim 18, or **three**, per Claim 19, **persistent connection(s) between the object and database that is maintained by the object**.

The examiner takes Official Notice that it is established and well known in the art to program persistent connections in object-oriented applications, whether there be three or more persistent connections, depending on the requirements of the particular application. Programming languages such as Java and C++ have provisions for establishing and maintaining persistent connections in the course of creating object-oriented applications. These connections ensure that an application has a continuous link to either a database or other related applications to ensure accessibility to the application or database during the course of program execution.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the limitations of Claim 14, as taught by Bayer and LOC, with having the object establish and maintain at least three persistent connections, for the purpose of ensuring continuous accessibility to the database during the course of program execution.

Regarding **Claim 20**, Bayer teaches: **an authoring system that enables a user to define an event** (column 6 line 50-51, start date set for survey as part of campaign in advance; column 6 line 53-54, surveys are set in queue order prior to offering to customers) **and create polling questions associated with the event** (Figure 4 #52, add/modify campaign; Figure 4 #56, add/modify question) **for distribution to the voters** (Figure 2A, sample webpage).

Regarding **Claim 21**, Bayer teaches: **a staging component that copies the event definition and polling questions to the database** (column 3 line 2-3, elements of survey webpages, including questions, are stored in a database; Figure 16A, campaign database table structure that defines campaigns and associated surveys; column 3 line 3-5, administrator can modify/create campaign information, see also Figure 4 #52).

Regarding **Claim 22**, all the limitations are addressed in Claim 1 above, except for: **the intermediate voting results are used to compute the final voting results in**

real time.

Bayer teaches:

the intermediate voting results are used to compute the final voting results in real time.

Column 17 line 62-column 18 line 2, a voter can select to view the final voting results of any previous voting campaign. This is done by specifying a date range. Once the voter enters their selection, the result is returned in real time over the on-line networked interface taught by Bayer.

Regarding **Claim 23**, Bayer does not teach: **a vote cache that receives and caches at least some of the voting data from the object.**

Oracle 8i teaches: **a vote cache that receives and caches at least some of the voting data from the object** (reference A page 2 paragraph 3 line 6, objects in cache can be updated, including for receiving data (i.e. votes) –the cache the objects are in provides memory for storing the vote data. The objects in cache memory that Oracle 8i teaches contain memory for receiving and storing data as well as instructions for manipulating that data.)

Oracle 8i teaches that the use of cached, non-relational objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and

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storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with a vote cache that receives and caches at least some of the voting data from the object, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

Regarding **Claim 24**, Bayer does not teach: **a processor that tabulates the cached voting data from the vote cache to generate intermediate voting results.**

Oracle 8i teaches: **a processor that tabulates the cached voting data from the vote cache to generate intermediate voting results** (Reference A page 1 paragraph 2 line 1-2, Oracle runs on a server that inherently contains a processor for tabulating and operating on the objects in the cache, including data for voting – see page 2 paragraph 3 line 6).

Oracle 8i teaches that the use of cached, non-relational objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with a processor that tabulates the cached voting data from the vote cache to generate intermediate voting results, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

Regarding **Claim 25**, Bayer teaches: **tabulating the intermediate voting results continuously to compute final voting results in real time** (Figure 13 #98, receive votes; Figure 14 #124, votes added to totals, column 2 line 19-20, in real time since votes can see results when they vote).

Claims 26 and 27 recite limitations similar to those cited in the rejection of **Claims 1, 14 and 15** above, and are therefore rejected under the same rationale.

Claim 28 recites limitations similar to those cited in the rejection of **Claim 23** above, and is therefore rejected under the same rationale.

Regarding **Claim 29**, Bayer teaches:
writing each of the received votes to the database to allow cross-tabulation of demographic data.

Figure 14 #126, a country summary is build to allow cross-tabulation of data from

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different countries (i.e. demographic data).

Regarding **Claim 30**, Bayer does not teach:

wherein the predefined time interval is approximately fifteen seconds.

Oracle 8i teaches:

wherein the predefined time interval is approximately fifteen seconds.

Reference A page 5 paragraph 2 line 1, time durations for pinning objects in memory can be specified in a predetermined way, including for fifteen seconds. The choice of 15 seconds is a design choice and is anticipated by the functionality provided by Oracle 8i.

Oracle 8i teaches that the use of cached, non-relational objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with wherein the predefined time interval is approximately fifteen seconds, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

Regarding **Claim 31**, Bayer teaches:

tabulating in memory a plurality of the intermediate voting results written to the database such that the final voting results are updated;

column 30 line 57-60, voting data is stored in memory as voters cast votes, i.e. the system tabulates in memory a plurality of the intermediate voting results such that the final voting results are updated.

and writing the updated final voting results to the database.

column 30 line 64-67, the final voting results are added (i.e. written) to the database.

Regarding **Claim 32**, Bayer does not teach:

further comprising updating the final voting results approximately every ten seconds.

Oracle teaches:

further comprising updating the final voting results approximately every ten seconds.

Reference A page 5 paragraph 2 line 1, time durations for pinning objects in memory can be specified in a predetermined way, including for ten seconds. The choice of 10 seconds is a design choice and is anticipated by the functionality provided by Oracle 8i.

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Oracle 8i teaches that the use of cached, non-relational objects provides high performance access (Reference A Page 2 paragraph 4 line 1-2).

Both Bayer and Oracle 8i address utilizing computers to handle manipulating and storing information on databases, and thus both are analogous art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Bayer, as discussed above, with wherein the predefined time interval for updating the final voting results is approximately ten seconds, as taught by Oracle 8i, because it would provide a high performance way to tabulate votes and write voting results to a database.

(10) Response to Argument

The applicant argues that the cited references fail to teach the amended limitation of caching and tabulating votes in an object prior to writing into the database where the raw votes have never been written to the database.

The examiner respectfully disagrees.

In further support of this argument, the applicant cites individual passages from the cited Oracle 8i reference that suggests the teaching is opposite from the claimed

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invention. To this the examiner would point out that the fact that Oracle teaches pulling a copy from a database to write to it does not teach away from the claimed invention, rather it supports the teaching of tabulating information in a cache prior to writing it to a database. One of ordinary skill in the art would recognize that (1) performing operations in a cache is faster than performing those operations in a database (2) the operations in a cache require a mapping of where the data would go in the database once those operations in the cache are performed.

A person of ordinary skill in the art would recognize that Oracle teaches the amended claim limitations of batching in a cache prior to flushing the data (i.e. updating the data) to the database.

An cache is nothing more than a different type of memory where operations can be performed and results stored in a much faster manner than is would be performed in the database memory. As evidenced by the Oracle teachings, this type of construct in computing is old and well known in the art. For example, on page 2 of Oracle's Reference A, paragraph 4 and 5, it is taught that Object Caching is a high performance way of navigating and manipulating objects. It is further taught in paragraph 5 that the objects mirror the parent database structure (e.g. where the language is "C", the structure in the Oracle objects mirrors this structure). (Another example of "caching" is the loading of programs from a CD or a hard drive into a PC's 'memory' to run. Both the hard drive and the PC memory (i.e. RAM memory) are places where data can be stored, but operations performed in RAM are done much faster than performing those operations by writing to a hard drive or CD.)

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Mirroring or making a copy of a database structure in a cache is analogous to making a copy of something so that the copy can be modified without modifying the “master” copy. As taught by Oracle, this “caching” approach provides for high performance, since the objects are faster and more easily modified (e.g. operations performed, summing, subtracting).

Using the cache approach requires that the object has at least some reference to the “master” in the database, so that when the operations are done, and it is time to write the result, the program has a reference (i.e. an address, a variable name) in the database of where the result goes. One of ordinary skill in the art would recognize that the writing of data from the database into the cache would be the starting point – the objects, i.e. the data, would then be modified while in the cache prior to writing the final result into the database.

A person of ordinary skill in the art at the time of the invention would be well versed in the use of caches as a known technique for performing various manipulations prior to writing the result of those manipulations to the database.

The particular claimed feature would be obvious to a person of ordinary skill in the art based on what is disclosed in the cited references. Bayer teaches that when a person votes, that vote is tabulated into the database. Each vote results in a particular database record being updated. However, Bayer does not address what is elsewhere well known in the art about database caching, as is taught by Oracle. On page 2 of Oracle Reference A, the database objects retrieved from the database are updated in the cache. When the updating is completed (per a predefined time interval for updating

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the actual database – see Reference A page 5 under “pin duration” – for specifying how long the database objects for updating are held in the cache), the database is updated. Thus, a combination of Bayer and Oracle suggests using a database object cached in memory for counting voting totals before they are written to the actual database. This technique is known to significantly improve speed and performance since the database is not updated when every vote is cast, but rather when after a predefined period of time the vote totals in the cache are then updated to the database. Since the cache is the front end for what later happens in the database, the vote totals are cached and tabulated in the cache prior to being written in the database. The database objects loaded into the cache *prior* to the voting is simply the starting point for counting the votes. The cache needs the latest copy of what is stored in the database itself prior to performing the counting – this ensures consistency with the “master” version of what is stored in the actual database so that the votes tabulated in the cache represent an accurate total of all the votes.

In the Bayer teachings, when someone votes, this is a raw vote. That is, it is coming from someone sitting at their PC casting a vote which is then written to the database. A cast vote that has not been counted is a raw vote. (Blumberg also teaches the external voting by users, where the votes are tabulated). This teaching in combination with the caching teachings of Oracle, as discussed above, render the claimed invention obvious. As noted above, a person of ordinary skill in the art would combine the voting teachings of Bayer with the caching teachings of Oracle, to fully meet the claimed limitations. The functionality of Bayer, Blumberg and Oracle is not

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destroyed by the combination of references. A predictable result is achieved through the counting of votes in a database that are first received in the cache (i.e. the live event object). Even assuming *arguendo* that there was no motivation to combine the references as per TSM, the combination of these references teach the claimed limitations to produce a predictable result.

The examiner would also very respectfully point out to the applicant that in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *id.* At 1739 and discussed circumstances in which a patent might be determined to be obvious without an explicit application of the teaching, suggestion, motivation test. In particular, the Supreme Court emphasized that "the principles laid down in *Graham* reaffirmed the 'functional approach' of *Hotchkiss*, 11 How. 248." *KSR*, 127 S.Ct. at 1739 (citing *Graham*, 383 U.S. at 12 (emphasis added)), and reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The combination of the cited references of Bayer, Blumberg and Oracle provide a predictable result of accumulating raw votes in a cache which are then written into a database. It is the examiner's position that the claimed invention is thus a combination of known elements that produce a predictable result, and do not destroy the functionality of the references cited.

One of ordinary skill in the art would have recognized that applying the known technique of caching as taught by Oracle would have yielded predictable results and

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resulted in an improved system. It would have been recognized that applying the technique of caching as taught by Oracle to the teachings of Bayer regarding online voting would have yielded predictable results because the level of ordinary skill in the art demonstrated by the references applied shows the ability to incorporate the data processing features of caching into similar systems that use databases. Further, applying caching operations to Bayer with transaction records stored accordingly, would have been recognized by those of ordinary skill in the art as resulting in an improved system that would improve database operation and performance by caching the raw votes of Bayer in a cache as taught by Oracle.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623

6 April 2009

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